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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION N
10/694,047	10/28/2003	Norio Kimura	2003-1482	3900
513	7590	10/19/2004	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P.			ELEY, TIMOTHY V	
2033 K STREET N. W.			ART UNIT	
SUITE 800			PAPER NUMBER	
WASHINGTON, DC 20006-1021			3724	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/694,047

Applicant(s)

KIMURA ET AL.

Examiner

Timothy V Eley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/28/03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

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**DETAILED ACTION**

***Specification***

1. Applicant is requested to note the disposition of the parent application mentioned on page 1 of the specification.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 6 is rejected under 35 U.S.C. 102(e) as being anticipated by Miyashita et al(6,167,583).

a. Miyashita et al discloses a polishing apparatus comprising; a polishing section for polishing a surface of a substrate by holding the substrate and pressing the substrate against a polishing surface(64), the surface of the substrate having a semiconductor device thereon; and a cleaning section(65) for cleaning at least a polishing surface of the substrate while supplying electrolyzed water to the substrate. Whether or not a metal-oxide film is formed on the polished surface of the

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substrate by the electrolyzed water would depend upon the exact type of structure of the semiconductor device. However, the Miyashita et al apparatus is capable of performing this feat. See figures 1,2, and 6; column 1, lines 6-21, column 7, lines 23-44.

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1,2,4,5,7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita et al in view of Hayashi et al(6,379,230).

a. Miyashita et al is explained above.

b. Miyashita et al does not specifically disclose a top ring for holding the substrate(claim 1), nor another polishing surface for conducting a secondary polishing of the polished surface(claim 7).

c. However, Hayashi et al discloses that it is well known in the art to use a top ring for holding a substrate and pressing it against a polishing surface(see figures 2,4 and 5), and at least two polishing surfaces for conducting several polishing steps on a polished surface. See figure 3.

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d. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Miyashita et al apparatus by using a top ring for holding the substrate against the polishing surface, and providing another polishing surface for conducting a secondary polishing of the polished surface in order to optimize polishing of the semiconductor as taught by Hayashi et al.

e. Regarding claim 4, Miyashita et al disclose a supply device for supplying diluted hydrofluoric acid to the substrate(see column 8, lines 9 3-10).

f. Regarding claims 5 and 8, the apparatus is capable of processing a substrate having a copper layer.

g. Regarding claim 8, whether or not a metal-oxide film is formed on the polished surface of the substrate by the electrolyzed water would depend upon the exact type of structure of the semiconductor device. However, the Miyashita et al apparatus is capable of performing this feat.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita et al in view of Hayashi et al as applied to claim 1 above, and further in view of Sakurai et al(6,082,373).

a. Miyashita et al in view of Hayashi et al is explained above.

b. Miyashita et al as modified does not disclose an ultrasonic transducer for applying ultrasonic vibrations to the electrolyzed water before supplying the electrolyzed water to the substrate.

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c. Sakurai et al disclose that it is well known in the art to apply ultrasonic vibrations to electrolyzed water before supplying the electrolyzed water to a substrate for cleaning the substrate. See column 1, lines 46-48.

d. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have further modified the Miyashita et al apparatus by providing an ultrasonic transducer for applying ultrasonic vibrations to the electrolyzed water before supplying the electrolyzed water to the substrate as taught by Sakurai et al in order to provide more efficient cleaning of the substrate.

#### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

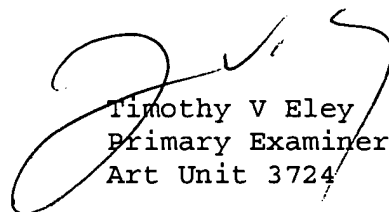
The cited prior art discloses apparatuses for processing semiconductor devices.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy V Eley whose telephone number is 703-308-1824. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan N Shoap can be reached on 703-308-1082. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Timothy V Eley  
Primary Examiner  
Art Unit 3724

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